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ABSTRACT

Since the early 1990s, China's government has followed a socialist market economy system. Accordingly, the technical and vocational education (TVE) should be restructured to meet its needs. Reform of the TVE system has four aspects. First, reform of the planning system includes a move from a central plan of enrollment to planning according to local needs, a move from government assignment of jobs to students seeking their own jobs, and a move from total government funding to mixed funding from government, fees from students, donations from enterprises, and profits from school-run enterprises. Second, reform of the administration system involves a shift from TVE schools set up by government departments to the encouragement of trades, enterprises, social organizations, and individuals to set up and run TVE schools; from assigning graduates to jobs only in their training areas to allowing them to seek jobs in other fields; and encouragement of more schools to set up school-owned enterprises. Third, readjustment of specialties and curricula by vocational schools to reflect labor needs, such as setting up or adding such specialties as tourism, hotel service, cosmetology, and information services in cities and multicultivation, repair services, construction, and restructure specialties in rural areas. Fourth, reform of the instruction process includes introduction of competency-based education, implementation of the skill-oriented certificate for workers, and qualification certification. (YLB)

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CASE STUDIES ON TECHNICAL AND VOCATIONAL EDUCATION IN ASIA AND THE PACIFIC

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International Project on Technical and Vocational Education
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CASE STUDIES ON TECHNICAL AND VOCATIONAL EDUCATION IN ASIA AND THE PACIFIC

Reform of China's Technical and Vocational Education in the Transition from a Planned Economy System to a Socialist Market Economy System — A Case Study

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UNEVOC is the International Project on Technical and Vocational Education which was launched by UNESCO in August 1992. In the field of technical and vocational education, UNEVOC aims to foster the international exchange of ideas, experience and studies on policy issues; strengthen national research and development capabilities; facilitiate access to data bases and documentation; promote innovations in staff development; and support international cooperative actions.

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KEY FACTS

Area 9.6 million sq km

Population: 1.17 billion (1992), growth rate 1.16 per cent per annum

Official Title: The People's Republic of China

Climate and Geography:
The climate ranges from subtropics in the south to temperate in the north. The west part of the country is Qinghai-Xizang Plateau. The country borders on the Pacific Ocean in the east and on South China Sea in the south. The hinderland and east part of the country belong to plain zones.

Official Language: Chinese Han language (putonghua).

Ruling Party: Communist Party of China

Head of Government: Mr. Jiang Zemin, President of the country
Mr. Li Peng, Premier of the State Council (government)

Currency: Renminbi (RMB) yuan

Political System: The People's Republic of China is a socialist state under the people's dictatorship led by the working class and based on the alliance of workers and peasants. The National People's Congress and the local People's Congress exercise state power. The National People's Congress of the People's Republic is the highest organ of state power. Its permanent body is the Standing Committee of the National People's Congress.

The President and Vice-President of the People's Republic of China are elected by the National People's Congress. The State Council, that is, the Central People's Government, of the People's Republic of china is the executive body of the highest organ of state power; it is the highest organ of state administration.

Education: The system comprises 4 parts, basic education (12 years) including primary and secondary education in which 9 years schooling belongs to compulsory education, technical and vocational education consists of 3 levels, that is, junior vocational school level, senior vocational school level and postsecondary vocational school level, higher education, adult education, including academic and short term training sector.

Economy: China adopts Socialist Market Economy System. The system comprises many economic elements with state-owned enterprises as the main body. Other elements include collective-owned, private, enterprises and joint ventures with foreign capital, etc.

GNP: 2403.9 billion (1991) RMB yuan, growth rate 8.8 per cent (81-91).

Gross Product of Industry:
3707.6 (1992) billion yuan

Gross Product of Agriculture:
908.5 (1992) billion yuan

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EXECUTIVE SUMMARY

Transition toward a socialist market economy

Since the implementation of a reform and 'open-door' policy at the end of the 1970s, China's economy has developed rapidly. In the early 1990s, the government decided to adopt a socialist market economy system with an emphasis on production according to market demands, export-oriented, development of economic elements, including state-owned, collective-owned, private and joint-ventured, etc. Accordingly, the technical and vocational education system should be restructured to meet the needs of a market economy.

TVE system in China - three levels

1. Tertiary (post-secondary)
   vocational university (2 to 3 years of schooling)
   89 institutions, enrolment of 71,000
2. Secondary (senior high)
   3694 specialised secondary schools, enrolment of 2.82 million
   4475 skilled worker schools, enrolment of 1.74 million
   8403 vocational schools, enrolment of 3.06 million
   16,842 vocational institutions in total with an enrolment of 7.62 million which occupies 53.71 per cent of the total enrolment at senior high school level
3. Elementary (junior high)
   1582 elementary vocational schools, enrolment 562,400, which occupies only 1.38 per cent of the total enrolment at junior high school level

Reform of the TVE system

1. Reform of its planning system
   - enrolment
     move from central plan to planning according to local needs
   - job placement
     move from government assigning jobs to students seeking jobs on their own
   - funding
     move from total government funding to mixed funding from government, fees from students, donations from enterprises and profits from school-run enter prises and shops
2. Reform of its administration system
   - move from TVE schools set up by government departments encouraging trades, enterprises, social organisations, individuals to set up and run TVE schools
   - move from graduate assigned jobs in the fields or trades the schools belong to, to graduates seeking jobs in other fields or trades
   - move from different kinds of schools administered by different government departments to jointly set up and run by different departments
   - more schools encouraged to set up school-owned enterprises
3. Readjustment of specialities and curricula
   - in cities to set up or add specialities such as tourism, hotel service, cosmetlogy, hairdressing, motor repairing, communication, information services, etc.
   - in rural areas to add specialities such as multi-cultivation, repair services, construction, dressmaking and restructure specialities accordingly
4. Reform of the process of instruction
   - emphasis on systematic knowledge and vocational skill and professional competence (experimenting with CBE, MES, Dual-system)
   - TVE schools only grant academic diploma or certificate; implementing double-certificate system including a skill-scale certificate from professional or trade societies
   - recently established Green Certificate System in rural areas

1. THE STATUS QUO OF CHINA'S TECHNICAL AND VOCATIONAL EDUCATION

1.1 ECONOMIC SITUATION

China, located in north–east Asia with a long Pacific coastline, and a land area of 9.6 million square kilometres. China is a developing country. The economic development of its provinces is uneven, owing to the differences of their natural resources, the educational level of the people, etc. The economy of coastal provinces develop quickly while those provinces in western part of the country are undeveloped, with a scattered population and quite low productivity. Whereas the economies of provinces in the central hinterland develop faster than those in the western part and slower than those in eastern coastal provinces.

China has been adopting a reform and 'open-door' policy since the end of 1970s , accelerating its domestic production and international trade, foreign investment and advanced technology so as to develop its economy faster and better. As a result, China's economy developed at high speed during 1980s. In 1992, the Chinese government decided to gradually adopt a socialist market economy system. This means it will move from a planned economy system into a socialist market economy system, develop its export-oriented economy and gear its domestic production and international trade gradually to the World market. In the 1980s, China's economy developed rapidly. According to the data by State Statistic Bureau, from 1981 to 1991, GNP in China increased 8.8 per cent each year as an average. In the year of 1991, the value of GNP reached 1,985.5 billion yuan (RBM), equal to USD 373 billion (according to average exchange rate in that year issued by China People's Bank, RBM 5.32: USD 1.00), whereas the national income reached 1,611.7 billion yuan. However GNP per capita in China is still very low because of its undeveloped economy and large population. The average yearly income for workers and staff members in 1991 was RMB 2,340 yuan, equal to USD 440.

In China, as a developing country, 73.63 per cent of the population live in rural areas, while 26.37 per cent in cities and towns, according to the statistics. More than half of the labour force of the country work in agriculture. The number of people in work is 583.6 million. Table 1 gives the ratio of people working in the first, second and third industries, through which we can see the level of productive force of the first industry is very low, while the third industry is undeveloped.

Table 1

Percentage of people working in the first, second and third industries in 1991

First industry	59.8 percent
Second industry	21.4 percent
Third industry	18.0 percent

Table 2

Changes of percentage in output value breakdown into the first, second and third industries

	1980	1990	1991
First industry	30.4	28.4	26.6
Second industry	49.0	44.3	46.1
Third industry	20.6	27.2	27.2

China's agricultural output has been very good. There has been a decrease in the output value of the first industry resulting in an increase in the second and third industries. The output value of the third industry is still quite low. China's economy sped up after the Spring of 1992, when Mr Deng Xiaoping made a speech in the South of China on accelerating the reform and economic reconstruction. Then the increase in the rate of economy reached double figures. The living standard of the people was raised remarkably resulting from the expansion of the economy.

1.2 HUMAN RESOURCES DEVELOPMENT

China has a largest population of 1.16 billion in the world. So, education covers a tremendous number of people. According to the statistics in 1991, the number of labour force resources was 709.82 million. China has rich potential in the Labour force which needs to be developed. The educational level of the Chinese people is not high. The average schooling of Chinese adults is about five years. There are 180 million illiterate adults which make up 22.28 per cent of adult population.

The educational undertakings in China are tremendous. Following are some figures according to educational statistic bureau in 1993 by State Education Commission:

- 965,380 regular pre-occupational schools at all levels and of all types including those in basic and vocational education;
- 208.13 million of students in regular schools at all levels and in all types, of which
  106.8 thousand graduate students
  2.53 million undergraduate college students
  55.58 million secondary school students of all types
  124.21 million primary school students
  168.6 thousand blind and deaf-mute school students
  25.52 million kindergartens
- 13.7 million teachers, staff members and workers in above-mentioned regular schools;
- 469,575 post-occupational adult education institutions;
- 54.22 million of adult school enrolment at all levels and in all types, of which —
  1.86 million enrolment of adult higher education institutions
  44.48 million enrolment or adult secondary school students of all types

- 893.7 thousand teachers, staff members and workers in all adult educational institutions;
- 262.35 million students in regular and adult schools;
- 14.6 million teachers.

China is gradually implementing nine-year compulsory education in the light of 'Compulsory Education Law'. We have met or shall meet some difficulties in carrying out compulsory education in some economically undeveloped areas such as some western provinces, the government demands nine-year compulsory education be implemented by and large across the country by the year 2000.

Secondary technical and vocational education in China had developed to some extent in late 1950s and early 1960s. In 1965, there were 871 specialised secondary schools with an enrolment of 392,000; 61,626 agricultural and vocational schools with an enrolment of 4.43 million students; and 334 skilled worker schools with an enrolment of 123,400 students.

In the second half of the 1960s technical and vocational education was wrongly criticised as a phenomenon of unequal opportunity in education. As a result, most vocational schools of different types were closed down. The percentage of students enrolled in different types of vocational schools diminished in early 1970s to only two per cent of the enrolment at senior high school level. This problem continued to exist until the end of 1970s. Graduates from general senior high schools were too numerous to enter into higher education institutions, and they lacked appropriate technical competence or skills for employment. This became a serious social problem.

The country began large-scale economic construction after 1979, and large numbers of primary and secondary specialised personnel and skilled workers were badly needed. So the government decided to make great efforts to develop human resources.

In the year of 1980, the State Council of China put forward the reform of secondary educational structure and development of technical and vocational education in order to meet the needs of socialist modernised construction. For this purpose, the government tried to resume and set up specialised secondary schools and skilled worker schools, and transformed quite a few general secondary schools into vocational schools or built new vocational schools. Since then, secondary technical and vocational education has developed considerably. Meanwhile, the government carried out literacy education and vocational training in rural areas, for the sake of developing human resources and promoting rural economy.

1.3 THE EXISTING TVE SYSTEM

1.3.1 LEGISLATION

China is a centralised state, yet each province has its own autonomous jurisdiction owing to the vast territory of the country and uneven development in the culture and economy of each province. The central and local governments have issued respectively regulations and decisions concerning the system, structure, instructions, administration, school teachers, teaching materials etc. of technical and vocational education and the placement of graduates. That is the basis for the guidance of technical and vocational (TVE) education. But all these documents tend to be administrative rather than laws and decrees for technical and vocational education. For example, the government of Shandong province has issued successively more than 30 documents such as, 'Regulations of Secondary Technical and Vocational Education in Shandong Province'. Now, the central government has begun to work out 'Technical and Vocational Education Law'. After several revisions, the draft of law will be advanced to the Standing Committee of the National Peoples' Congress for approval.

1.3.2 MANAGEMENT

Under the guidance at macro-level of the State Education Commission, TVE in China is administered by multi-government departments. The State Education Commission works out general and specific policies, and makes overall planning and all-round arrangements of its reform and development. Other government departments such as State Planning Committee, the Ministry of Labour, the Ministry of Personnel, the Ministry of Finance etc. are engaged in the forecast of human resources demand, in provision of financial resources, and in placement of school graduates, according to their different functions. The local governments bear major responsibility for the development and management of TVE of their districts. They take all-round arrangements of geographical location of schools, educational programs, admission of students, placement of graduates, and medium-term and long-term planning. Sectors of trades and professions concerned give professional guidance in the formulation of standards of working posts and specifications or personnel to be trained, and evaluation of teaching quality.

Generally, there are coordinating organisations at the level of county and above, consisting of local educational authorities, labour department and professional department, and with local government taking the lead. As for the school management, we set up boards of management or managerial councils consisting of competent authorities, enterprises and representatives of various circles, making decisions or coordinating major issues which the schools come across.

There are three kinds of TVE institutions at secondary (senior high) level in China: specialised secondary school, vocational school, and skilled worker school.

Different types of school are administered by different departments on the basis of the existing administrative system of TVE. At secondary level, specialised secondary schools are mainly administered by the trade or professional departments. Vocational schools are managed by educational authorities, or by educational authorities and professional departments or enterprises that run the schools. Skilled worker schools are managed by labour departments. At higher level, there are two kinds of higher technical and vocational education institutions. They are short-cycle vocational universities and vocational teachers' colleges. They are run and managed usually by local (municipal or provincial) governments.

1.3.3 STRUCTURAL SYSTEM

There are three levels of TVE in China, within which the secondary level is the principal part.

Higher vocational education institutions consist of vocational teachers' colleges and short-cycle vocational universities. There are 11 vocational teachers' colleges in the country with an enrolment of 14,600 students and 89 short-cycle vocational universities with an enrolment of 71,000 students.

There are three kinds of secondary TVE institutions. Data from educational statistics in 1993 show that:

- 3694 specialised secondary schools with an enrolment of 2.82 million students.
- 8403 vocational schools with an enrolment of 3.06 million students.
- 4475 skilled worker schools with an enrolment of 1.74 million students.
- 16,842 schools in total and with a total enrolment of 7.62 million students which is 53.71 per cent of the total enrolment at senior high school level

In addition, there are, in rural areas, 1582 elementary vocational schools with an enrolment of 562 400 students, which occupy only 1.38 per cent of total enrolment at junior high school level. Students in these schools mainly study general knowledge courses. They also study some vocational courses and skills during 20-25 per cent of class hours. Graduates from such schools are required to basically reach the level of junior high education, and simultaneously to master one or two practical skills needed in rural areas. After graduation they can obtain employment if they don't want to enter a higher school.

There are various kinds of technical and vocational training in China in addition to formal TVE. More than 2000 training and employment centres have been set up across the country under the jurisdiction of labour departments in local governments. More than 10 000 000 people get trained each year in above-mentioned centres and other types of various formal vocational schools.

1.3.4 ARTICULATION AND LINKAGE

China carries out nine-year compulsory education. There are three levels of TVE, elementary, secondary and tertiary, the same as with general education. On completing nine-year compulsory schooling, junior high school graduates can go further into senior high school or into secondary vocational school on their own. Theoretically, vocational school graduates can advance to a higher vocational school or enter a higher general school, as do the general school graduates. But actually, very few people did.

In, China, in-service training and short-term vocational training are all included in the system of adult education in the light of the managerial system. Whereas various kinds of regular technical and vocational colleges and vocational schools belong to the system of TVE, yet they also provide in-service training and vocational training courses as well.

2. A FORECAST OF THE FUTURE SITUATION: THE GOAL WE HOPE TO ACHIEVE

The TVE system cultivates various kinds of personnel for Chinese socialist construction, including well-educated elementary and intermediate technical personnel, managerial personnel, skilled workers and other labourers.

The State Council of China issued a decision on energetically developing TVE, urged to reach the goal gradually in 1990s, on the basis of the need for the social and economic development that most of newly recruited labour forces receive necessary basic technical and vocational training, that those who take on a special or professional job should be trained more strictly and systematically.

Currently about 20 million people will enter the labour force each year. Most of them need technical and vocational training to some extent. Besides, for better economic development, the second industry will be getting adjusted and optimised while the third industry will increase rapidly. Therefore, a large labour force in agriculture will transfer to small towns' enterprises or to the third industry. So, these labourers need technical and vocational training as well.

We must develop energetically technical and vocational education in order to meet the above-mentioned demand for labour. The State Education Commission planned, in the field of regular education, to increase the enrolment ratio of TVE up to 55–60 per cent of the total enrolment at senior high school level by the end of the century. Meanwhile, higher level and rural elementary level TVE will develop accordingly, and various kinds of vocational training will be provided for graduates from general primary and secondary (both junior high and senior high) schools in towns and villages who want to get employment.

According to the State Council, by the end of this century, a framework of the TVE system will be initially established with Chinese-specific features, a rational structure, various types, complete sets of specialities, articulation from elementary to higher level and developing itself harmoniously with other elements of the educational system.

3. ACCELERATION OF THE REFORM OF TVE IN CHINA TO SUIT THE NEEDS OF MARKET ECONOMY SYSTEM

In 1992, China explicitly declared it would set up a socialist market economy system and speed up the pace of reform and the open-door policy and construction of modernisation. Therefore, TVE must meet the changes and development of a market economy system. On the one hand, the government will adopt strategic measures to innovate the TVE system to answer the demands of the market economy for a qualified labour force. On the other hand, and in response to social needs, the technical and vocational education institutions are carrying out steps and measures of reform in their own institutions. With gradual maturity and perfection of a market economy system, TVE will surely be further and better developed.

3.1 GOALS OF COUNTRY DEVELOPMENT

By the year 2000, a socialist market economy system will be initially established and the strategic goals of social and national economic development will be realised. That is to say, on the basis of raising benefits and optimising the structure of the economy, GNP of China will be four times as much as that in 1980 in constant value, and the living standard of Chinese people all over the country will reach a higher level.

Specifically speaking, by the year 2000, GNP per capita will be USD 800. The economic system will basically complete the transition period from a centrally-planned economic to a socialist market economy. Thus, social production and provision of the labour force will depend mainly on the needs of the markets, both domestic and abroad.

Originally, China has been a country with centrally-planned economy system. The transition to a socialist market economy will be step-by-step, because maturity and perfection of market system is a gradual process and will take quite a period of time.

3.2 REFORM OF CHINA'S TVE IN THE PROCESS OF TRANSITION TO MARKET ECONOMY SYSTEM

What is our concept of market economy at the recent stage of social development in China? First and foremost, industry and enterprises should respond flexibly and promptly to the demands of productive elements such as goods, resources and labour force etc. by market economy. Therefore we should often readjust structure of production so as to optimise arrangements of resources. For this purpose, TVE must also be responsive promptly to readjustment of the structure of industries and production, and to the changes in provision and demand of various kinds of labour force. So, educational authorities in charge of TVE, especially at the top level should reconsider their function and ways of working to some extent.

Under the recent situation, the functions and responsibilities of the State Education Commission should be as follows:

- assist the legislature to work out and promulgate laws, decrees, policies and regulations concerning TVE
- to set the standards and requirements for running different kinds of schools and to set criteria for evaluation of school instruction
- to work out and promulgate the planning of TVE development and an yearly plan
- to raise and issue principles and set examples of school teaching program development and curriculum development
- to promote, adjust and control the development of TVE system through financial assistance and help grant loans to schools

The State Education Commission does not administer directly any individual schools. As one of her functions, the State Education Commission has the responsibility to guide the educational departments in other Ministries and of all provinces.

In the conditions of the socialist market economy system, reform of the TVE system in China has started mainly on following aspects:

3.3 REFORM OF PLANNING SYSTEM

Central planning has been the system of China's economy, and the system of education as well. We have decided to shift from the previous economic system to a market economy system.

Central planning of TVE development means that the development and investment of TVE, enrolment, and placement of students are precisely planned by the central government (State Education Commission). Now in the field of economy, central planning cannot cover everything, because some changes have taken place in the system. In recent years, in addition to state-owned enterprises, small towns' industries and enterprises emerged and expanded rapidly. Now, non-state-owned enterprises, including small town collective-owned industry and private industry developed at high speed. They employed a 90 million labour force, of which 60 per cent are in manufacturing industry and the third industry sectors..

Let us take Changshu city, Jiangshu province for example. In 1992, the total value of production of small town enterprises reached 18 billion yuan (RBM) which occupies 66 per cent of total value of the whole city. School graduates assignment planning previously did not include above-mentioned non-state-owned enterprises. Therefore, reform of central planning is necessary. The State Education Commission still work out a national plan of enrolment and placement, but the Local Education Commissions have the right to adjust it according to their own circumstances.

Previously, graduates from specialised secondary schools and skilled worker schools were assigned jobs according strictly to a plan. This assignment system doesn't suit the market economy and reform is now under way. Schools provide students with job opening information from enterprises and organisations concerned. Students are allowed to seek jobs on their own. Government departments and schools will make efforts to help them. Now, enrolment and placement of students are planned in accordance with the demands of certain kinds of labour force and professional manpower by market economy system.

3.4 REFORM OF ADMINISTRATIVE SYSTEM

Most TVE institutions were set up and administered previously by government professional departments, educational authorities or enterprises, or by any of them jointly. Only a few schools were set up and managed by social organs or by any individuals. Now the government encourages trades, enterprises, social organs and individuals respectively or jointly to set up and run various kinds of technical and vocational schools. We should make enterprises understand that they have a responsibility to contribute their efforts to TVE.

We encourage enterprises and professional departments to jointly set up TVE schools, not to only promote the integration of education of education and the industry, but also increase educational investment.

Huailu County, Hebei Province, initiated a County Vocational Education Centre in 1989, which combined some senior vocational schools and adult agricultural schools previously set up by Local Educational Authorities, and skilled workers schools previously run by Local Labour Department. In 1993, there were 44 classes in this centre with an enrolment of 2039 students. The Centre has 12 laboratories and 11 workshops and farms for students' practice and provides 22 programs.

By now, 60 county Vocational Education Centres have been set up in Hebei Province, each of them with an enrolment of more than 1000 students. This is kind of county vocational education centre is considered successful as one of jointly run vocational schools.

In cities there are a lot of senior vocational schools jointly run by enterprises. For example, in Suzhou and Wuxi city, Jiangsu Province, some light industry schools and silk/textile schools are run jointly by some small and medium sized enterprises and administered by a governing board which consists of representatives of enterprises. The enterprises provide financial support to the school, practising fields to students and placements for graduates. Another example is Shanghai Commercial School which is run jointly by some grand department stores and chambers of commerce.

The other problem facing us is that schools set up and run by professional departments serve only their own fields or trades. This means graduate students were only assigned jobs in their own field. Now we advocate that schools should serve the whole society or the whole community so that graduates can move easily to other trades and other organisations to meet the market demands.

As for the reform of running vocational schools, Hobei province has successfully set up 60 large and multi-functional vocational centres by combination of several small schools, vocational school, skilled worker school, and specialised secondary peasant school, into one in each county. Each centre has an average of 1260 students. For example, there are 10 specialties, 7 experimental places, 20 classes and more than 1000 students in the Huailu Vocational Centre of Hobei province.

The government advocates and encourages schools to set up and manage school-owned enterprises, shops, restaurants and so on, for the purpose of not only providing students with chances of skill practice but also making money for the school.

In recent years, school-run enterprises have developed rapidly. In 1992, the total value of production and of services made by specialised secondary schools and vocational schools of the nation was up 3 billion yuan RMB, of which 500 million yuan RMB was net profits. The skilled worker schools of the country created the value of production of 1.28 billion yuan, of which 135 million yuan was net profit. Most of the profits will be used for improving school facilities, the rest will be used for increasing staff income.

Now, let us take the Second Dressmaking School in Shenyang city for example. In 1992, the school-run factory made profits of 1.04 million yuan RMB; 40 per cent of the profits were handed to the school for improving school facilities and staff income so that teachers' income increased an average of 15–20 per cent each year.

3.5 READJUSTMENT OF SPECIALTIES AND CURRICULUM DEVELOPMENT

With the development of a market economy and the open-door policy, tourist trade in cities and the third industry have developed fast. Vocational schools should readjust timely their specialties and curricula in accordance with the demands of the number and the specifications of the labour force.

Therefore, vocational schools in cities added such kinds of specialties as tourism, hotel service, cosmology, hairdressing, motor repairing, communication, information services etc. As for the vocational schools in rural areas, with the shift of the rural labour force to the second and third industries, they added specialties such as multi-cultivation, repair service, construction, dressmaking etc., and restructured the curricula accordingly.

The third industry is sure to develop much faster under a market economy system, in this case, vocational education should keep pace with it. In Beijing, the West District Government claimed that

the ratio of the third industry in the region will reach 80 per cent by the year 2000. That's a great challenge to vocational educators of the region.

On the other hand, we are now restructuring and standardising the list and contents of specialties of secondary TVE, including three kinds of secondary vocational schools.

3.6 REFORM OF THE PROCESS OF INSTRUCTION

The decisive factor in market competition is the quality of goods and services. That depends on the skill of workers and instruction in vocational schools. Now the staff in vocational schools have fully realised the importance of skill training.

In ancient China, apprenticeship had been set up and much emphasis had been laid on skill training. Owing to the rapid expansion of vocational education in recent years, we lack many skilled teachers and instructors, and training facilities. Besides, the way of teaching and training should be improved. We are now making every effort to seek effective methods to improve and innovate skill training, including learning experiences from abroad. We have introduced competence-based education (CBE) from Canada, the MES advocated by the ILO, and the dual-system from The Federal Republic of Germany. At present, the dual-system is on trial in some vocational schools of six cities and several large enterprises; the CBE is on trial in about 30 schools, whereas MES is in many skilled worker schools. We learn from others' experiences in order to create our own.

China introduced CBE and the methods of DACUM from Canada in 1990. More than 20 specialised secondary schools in China have set up cooperative relations with Canadian Community Colleges. They sent teachers to Canada. We have held two CBE seminars at national level, at which some Canadian scholars were invited to give lectures.

Now more than 50 specialised schools are experimenting CBE and DACUM. For example, Qinhuangdon Coal Industry School in Hebei Province has sent 10 teachers and administrators to visit community colleges in Canada. At present DACUM is on trial in finance and accounting programs, DACUM charts are worked out and teaching material were being adjusted concerning 17 courses. "Marketing" and knowledge of western management were added into the contents of learning. Positive results have been made and the reform of teaching method and contents were promoted. Now the experiments are going on, and even extending to the specialised schools of agriculture, electricity, machinery and so on.

Meanwhile, China will gradually implement the system of Skill-oriented Certificate for workers. At the same time we are going to put into effect Double-Certificate System in vocational schools. That means students graduating from any kind of vocational school will get a General Certificate from the school while passing a course exam, and will get a Skill-Scale-Certificate from trades or from the professional societies when they pass the technical or skill test.

In rural areas, we have made some steps in carrying out qualification certification for peasants which we call Green Certificate. When peasants receive some training for some time and master some practical skills, then they get Green Certificates. According to the plan of the Ministry of Agriculture, by the year of 2000, there will be 10 million peasants who have Green Certificates. This means there will be six to ten peasants who have Green Certificates in each village, so that the ratio of popularisation of agricultural scientific findings and new technology will be from about 35–40 per cent at present to 65–70 per cent by the year 2000. The implementation of Double Certificate and Green Certificate will surely improve China's TVE system and make it towards standardisation.

Appendix I
Education System in China